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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LIU, SAMUEL W	

ART UNIT	PAPER NUMBER
1653	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,408	ROEMISCH ET AL.	
	Examiner	Art Unit	
	Samuel W. Liu	1653	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/25/05 & 10/1/03*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *9-16* is/are pending in the application.

4a) Of the above claim(s) *10-15* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *9 and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☒ Certified copies of the priority documents have been received in Application No. 09/632,974 (US Pat. No. 6,670,455).

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/1/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of claims

Claims 9-16 are pending.

Note that the preliminary amendment filed 10/1/03 cancels claims 1-8. Applicants' request (filed 7/25/05) for extension of time of three months has been entered.

Election/Restrictions

Applicant's election (filed 7/25/05) with traverse of Group I, claims 9 and 16 is acknowledged. Applicants also elect "completing agents of divalent ions" for examination. The traversal is on the ground that Groups II-IV may be rejoined to Group I as they all depend from claim 9 of Group I.

Applicants' argument is found to be unpersuasive because, as indicated in the Office action mailed 3/25/05, Group I is related to Groups II-IV as product and process of use, and Groups II-IV are directed to distinct/different methods; each Group is patentably distinct from one another.

Applicants also assert that the additional election for a protein stabilizer is inconsistent with the Office examination for Application No. 10/701,671. The applicants' argument is not persuasive because the restriction requirement for 10/701,671 in the Office action mailed 4/26/05 sets forth the same requirement for additional election of a protein stabilizer for Group I thereof (see page 3 of the Office action). Thus, the requirement is still deemed proper and is therefore made FINAL.

Claims 9 and 16 and the elected completing agents of divalent ions are examined in this Office action. Claims 10-15 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

IDS

The references cited in the information disclosure statements (IDS) filed 1/1/03 have been considered by the examiner.

Objection to Specification

The disclosure is objected to because of the following informalities:

(1) The tile of this application is objected to because it is too long.

(2) On page 1, line 2, "(allowed)" should be changed to "(now US Pat. No. 6,670,455)" [see preliminary amendment filed 1/1/03].

(3) The current the specification does not comply with one or more parts of 37 CFR 1.821-1.825 since on page 1, lines 5-6 from the bottom, amino acid sequences "IYGGFKSTAG KHP"; "LLESLDPDXTPD"; "EFHEQSFRVEKI" and "SKFTXAXPXQFK" lack the corresponding sequence identifier (SEQ ID NO:_). A new paper copy and a computer readable from (CRF) are required as is the statement regarding no new matter and that the paper and CRF copies are identical.

(4) On page 2, line 4, "SDS-PAGE" should be spelled out in full for the first instance of use. See also page 9, the line 2 of the 3rd paragraph, PVDF"

(5) On page 6, line 16, "SDS_PAGE/Western blotting" and, page 10 line 13, "SDS-PAGEs/Western blots" should be changed to "Western blotting" and "Western blots", respectively, since western blot is a standardized method.

Corresponding correction is required.

Claim Rejections - 35 USC § 112, second paragraph

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter that the applicant regards as his invention.

Claims 9 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to clearly and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 recites "the protease activating blood clotting factor VII"; the recitation is considered to be indefinite because, without stetting forth the corresponding sequence for the protease thereof, it ambiguously refers to any protease enzyme having ability of activating the blood clotting factor VII, e.g., tissue type plasminogen activator (t-PA), a serine type protease, is such type of protease (see *Tsujioka* et al. (1999) 61, 34-39). It is of note that the specification sets forth that the claimed protease has amino acid sequence identical to the peptide sequence of Choi-Miura et al. (see page 1, the last three lines). Applicants may recite said sequence for the claimed protease to obviated the rejection. See also claim 16.

Claim Rejections - 35 USC §102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office Action:

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The claims 9 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Niwa et al. (US Pat. No. 5648250) as is evidenced by the known fact that tissue-type plasminogen activator (t-PA) protein, a serine protease, has ability of activating blood clotting Factor VII (*Tsujioka et al.* (1999, May) *Am. J. Hematol.* 61, 34-39).

In the patent claims 1 and 8, Niwa et al. discloses a pharmaceutical composition comprising tissue-type plasminogen activator (t-PA) protein which is a serine protease activating coagulation Factor VII as is evidenced by Tsujioka et al. reference.

Claim 9 as written is directed to the composition (but NOT a process of purifying the protein thereof) comprising any protease that activates coagulation Factor VII (*see also the rejection under 35USC 112, second paragraph*).

On Examples 2-12, Niwa et al. teach the t-PA protein is recombinantly produced/purified (see especially Example 12). Recombinantly produced protein is, in general, considered to be in a pure/highly-purified form or indistinguishable from the claimed purified protease thereof. Note that the current disclosure does not set forth percent of purity of the protease in the claimed pharmaceutical composition.

The process of purifying (e.g., by fractional precipitation alone or by the chromatography alone, or by both thereof) the said protein is not considered to have patentable weight to the claimed composition; moreover, on column 5, lines 14-31, Niwa et al. teach that the t-PA protein can be further purified by chromatography; and on column 1, lines 28-63, Niwa et al. teach further purification of the t-PA protein by affinity chromatography (via IgG coupled Sepharose column).

In light of the above statements, the Niwa et al. teachings anticipate instant claim 9.

The claims 9 and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Choi-Miura et al. (*J. Biochem.* (1996) 119, 1157-1165) as is evidenced by the known fact (provided by this specification) that a hyaluronan-binding protein has 100% sequence identity to amino acid sequence of the coagulation Factor VII activating protease polypeptide (see page 1, the last three lines).

Choi-Miura et al. teach hyaluronan-binding protein (PHBP) polypeptide which comprising a serine protease domain and has 100% sequence identity to amino acid sequence of the coagulation Factor VII activating protease polypeptide (see page 1 of the specification). Because the current application is directed to the composition comprising the said protease, and because structural feature is inherent property of a biomolecule and functional properties are determined by the structural feature, the above Choi-Miura et al. teaching anticipates instant claim 9.

Also, Choi-Miura et al. teach a reagent, i.e., a solution comprising 10 mM Tris-HCl, pH7.0, a peptidase and PHBP, assaying for digestion of the isolated PHBP polypeptide (see page 1158, the left column, the 4th paragraph), which anticipates instant claim 16.

It is of note that products of identical chemical composition cannot have mutually exclusive properties. A chemical composition and its properties are inseparable. Therefore, if the prior art teaches the identical chemical structure, the properties applicant discloses and/or claims are necessarily present. *In re Spada* 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). See MPEP 2112.01.

In Example 12, Niwa et al. teach a reagent comprising the purified t-PA protein which is dissolved in a phosphate buffer (pH 7.4). which anticipates instant claim 16.

Because the claim 16 language "*for use in biological teat system and for antigen detection*" is not considered to have patentable weight to the claimed composition, and because, even considering use of the protein in detecting a biomolecule, e.g., antigen, the purified t-PA has utility for such the use (see column 3, lines 3-19). The above Tsujioka et al. teachings are therefore applicable to claim 16.

The claims 9 and 16 are rejected under 35 U.S.C. 102(a) as being anticipated by Tsujioka et al. (*Am. J. Hematol.* (1999, May) 61, 34-39).

In "*Materials and Methods*" section, Tsujioka et al. teach a composition comprising the recombinantly produced tissue-type plasminogen activator (t-PA) protein which is a serine protease activating coagulation Factor VII. The said t-PA protein is dissolved in 0.025 M $CaCl_2$ solution which is considered to be a pharmaceutical composition. The Tsujioka et al. teaching anticipates instant claim 9.

Claim 9 as written is directed to the composition comprising coagulation Factor VII activating protease. Since how to purify (e.g., by fractional precipitation alone or by the chromatography alone, or by both thereof) the protease has little patentable weight to the claimed composition, the above Tsujioka et al. teaching is applicable to claim 9.

Also, Tsujioka et al. teach a reagent comprising the t-PA enzyme (see "*FVIIa assay*" section, page 35) for testing for (i.e., assaying for) the plasma Factor VII level, which anticipate instant claim 16. It is of note that the claim 16 language "*for use in biological teat system and for*

antigen detection" is not considered to have patentable weight to the claimed composition. Thus, the above Tsujioka et al. teachings are applicable.

Claim Rejections - Provisional Rejection, Obviousness Type Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130 (b). Effective 1 January 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claim 9 and 16 are provisionally rejected under the judicially created doctrine of double patenting over claims 13 and 16 of Application No.10/254,662. This is a provisional double patenting rejection because the conflicting claims have not in fact been patented.

The subject matter claimed in the instant application is fully disclosed in the referenced copending application and would be covered by any patent granted on that copending application since the referenced copending application and the instant application are claiming common subject matter, as follows:

Claim 13 of 10/254,662 discloses a pharmaceutical composition comprising coagulation factor VII-activating protease [FSAP], i.e., the protease activating blood clotting factor VII. Claim 16 of 10/254,662 discloses that the protease is recombinantly produced. Recombinantly produced protein is, in general, considered to be in a pure/highly-purified form or indistinguishable from the claimed purified protease thereof. The current disclosure does not set forth percent of purity of the protease in the claimed pharmaceutical composition. Since how to purify (e.g., by fractional precipitation alone or by the chromatography alone, or by both thereof) the protease has little patentable weight to the claimed composition, claims 13 and 16 of 10/254,662 is obvious variation of the instant claim 9.

Instant claim 16 sets forth a reagent comprising the protease that activates blood clotting factor; the reagent is considered to be a pharmaceutical composition (note that the claims langue "for use in biological systems and for antigen detection..." is an interned use and has no patent weight to the claimed reagent). Thus, for the same reasons stated above, claims 13 and 16 of 10/254,662 is obvious variation of the instant claim 16, and they are not patentably distinct from each other.

Claim 9 and 16 are provisionally rejected under the judicially created doctrine of double patenting over claims 30-31 of Application No.11/118,396. This is a provisional double patenting rejection because the conflicting claims have not in fact been patented.

Claim 31 of 11/118,396 discloses a pharmaceutical composition comprising the protease activating blood clotting factor VII. On page 15, the 3rd paragraph, the disclosure sets forth that the protease is recombinantly produced. Recombinantly produced protein is, in general, considered to be in a pure/highly-purified form or indistinguishable from the claimed purified protease thereof. The current disclosure does not set forth percent of purity of the protease in the claimed pharmaceutical composition. How to purify (e.g., by fractional precipitation alone or by the chromatography alone, or by both thereof) the protease has little patentable weight to the claimed composition. Claim 31 of 11/118,396 is therefore obvious variation of the instant claim 9.

Claim 30 of 11/118,396 sets forth a composition (an assay system for prothrombin time) comprising the above-mentioned protease. Thus, claims 31 and 30 of 11/118,396 are obvious variation of the instant claim 16 and they are not patentably distinct from each other.

Conclusion

No claims are allowed.

Prior Art

The prior art made of record and not currently relied upon in any rejections is considered pertinent to Applicants' disclosure:

• Kannemeier et al. (*Eur. J. Biochem.* (2001) 268, 3789-3796) teach composition comprising coagulation Factor VII activating protease (FSAP) proenzyme dissolved in 0.15

MnaCl/0.02 M sodium citrate solution which is considered to be a pharmaceutical composition. The FSAP proenzyme is purified by affinity (antibody column) chromatography (see page 3789) wherein the proenzyme protein is adsorbed to an immunobilized mAb wherein the chromatography is performed in the presence of a protease inhibitor, i.e., aprotinin (see the "*Materials and Methods*" section). Also, Kannemeier et al. teach a reagent comprising the above-mentioned purified proenzyme protein in assaying for (i.e., testing for) uPA zymogen, i.e., scuPA, activation (see page 3791, the left column, the 1st paragraph, and Figure 4).

• Jurgen et al. (EP 0952215 A2) teach a pharmaceutical composition comprising the coagulation Factor VII activating protease and/or its proenzyme (see paragraph [0039]).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Wei Liu whose telephone number is 571-272-0949. The examiner can normally be reached from 9:00 a.m. to 5:00 p.m. on weekdays. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber, can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 703-308-4242 or 703-872-9306 (official) or 703 872-9307 (after final). Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 305-4700.

Samuel Wei Liu, Ph.D.

August 3, 2005

JON WEBER
SUPERVISORY PATENT EXAMINER